

2024
MATHEMATICS
Time Allowed: 2 hours 30 minutes

Index No.

EMIS No.	Personal No.

Candidate's Name

Candidate's Signature

EMIS Number

District Name

SECTION A

1. Workout: $210 \div 7$

2. Express 750g as a fraction of 2kg .

3. Mzee Amoti is aged **88 years**. Express his age in Roman numerals.

4. Convert 1100_{two} to **denary base**

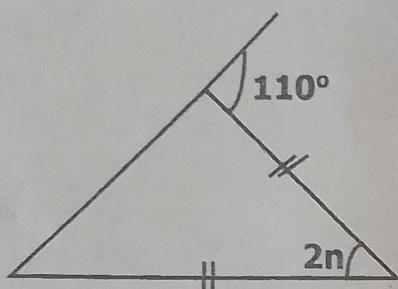
5. Given that **K** = {all composite numbers between **5** and **12**} and **M** = {square numbers between **0** and **15**}. Find

n(K ∩ M)

6. Simplify: $1\frac{1}{3} - 2\frac{3}{4}$.

7. The cost of **9** pens is **sh. 81,000**. How many similar pens can one buy with **sh. 108,000**?
8. The ratio of boys to girls in a class is **3:5**. If the class consists of **40** pupils, how many more girls than boys are in that class?

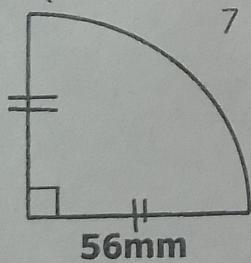
9. Calculate the value of **n** in degrees.



11. Give that $a = -7$, $b = 5$ and $c = -2$, find the value of $2a^2 - bc$.

10. The average mark of **8** pupils is **74**. What is **10** marks more than their total mark?

13. Find the perimeter of the figure below (take π as $\frac{22}{7}$)



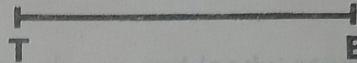
12. After covering $\frac{3}{7}$ of his journey, a motorist still had **40km** to reach his final destination. How long was the whole journey?

14. A lesson of **45 minutes** ended at **3:15p.m.**. At what time did it begin?

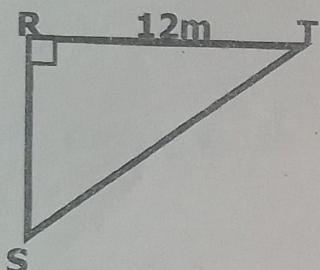
15. Write the value of 9 in **75.09** in words.

16. Drop a perpendicular from point **P** to meet line **TB** at **O**.

• **P**



17. Workout the length of **TS** if the area of the figure below is **30** square metres.



18. A trader deposited **sh. 500,000** in centenary Rural Development Bank at an interest rate of **10% p.a** for **6 months**. Find the simple interest he earned after that period.

19. **3** men can slash a school compound in **nine days**. How many **more men** are needed to slash the same compound in only **three days** if they work at the same rate?

20. What is the square of seven hundredths?

SECTION B (60 Marks)

21a. Amosi is **15 years** older than Ali. In five years' time, Ali will be half as old as Amosi.

a. How old is each now?

(3 marks)

(2 marks)

b. How old was Amosi fifteen years ago?

22. A circular wheel has a radius of 14cm. How many complete revolutions will it make to cover a distance of 8.8km? (4 marks)

23a. Simplify: $1\frac{3}{7} + 7\frac{2}{3} \div 3\frac{5}{6}$ (3 marks)

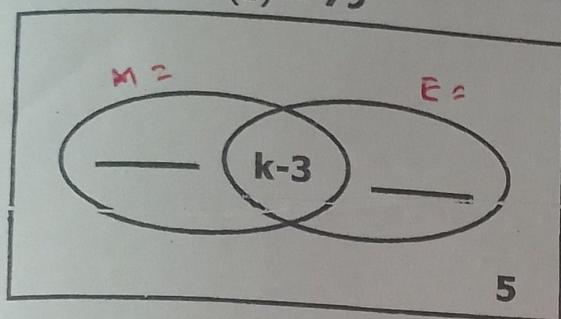
b. Mr. Okello bought a car at sh. 8,500,000 and sold it to Mrs Kalema at a loss of 10%. Mrs. Kalema sold it to Mr. Ekichu at a profit of 20%. How much money did Mr. Ekichu pay for the car? (3 marks)

24. In a class of **79** candidates, **45** like Math (**M**), $(3k+2)$ like English (**E**), but not Math, $(k-3)$ candidates like both Math and English while **5** candidates dislike the two subjects.

a. Complete the venn diagram below using the above information

(2 marks)

$$n(E) = 79$$



b. Find the value of **k**.

(3 marks)

25. A motorist travelled from town **X** to town **Y** at speed of **60 km/h** for **b hours**. He returned to town **X** at a speed of **30km/h**. The total time taken for the whole journey was **9 hours**.

a. Find the value of **b**.

(3 marks)

b. Calculate the average speed for the whole journey

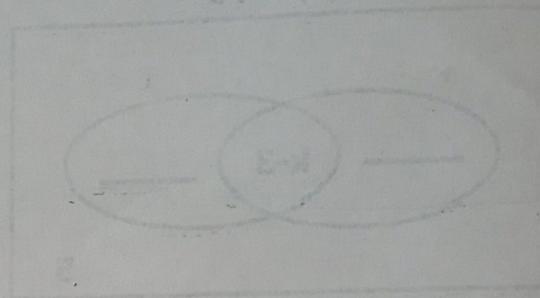
(2 marks)

26. A farmer in Kaliro district used her land as follows.

$\frac{1}{4}$ of it to grow tomatoes, $\frac{1}{2}$ of it to rear animals and the rest for food crops.

Represent the above information on a pie chart of radius 5cm.

(5 marks)



27a. A tank of water is $\frac{3}{4}$ full. When 30 litres of water is drawn from it, it remains $\frac{7}{12}$ full.
Find the full capacity of the tank. (3 marks)

b) Workout:
$$\frac{0.72 \times 0.96}{(0.12)^2}$$
 (3 marks)

28a. Workout the product of the next two numbers in the sequence below. (2 marks)

1, 8, 27, 64, _____, _____

b. The median of three consecutive even numbers is y . Find the numbers if their sum is thirty. (2 marks)

29a. Using a pair of compasses, a sharp pencil and a ruler only, construct a parallelogram $QPRS$ where $QP = 5.5\text{cm}$ and $PR = 4\text{cm}$ and angle $SQP = 60^\circ$. (4 marks)

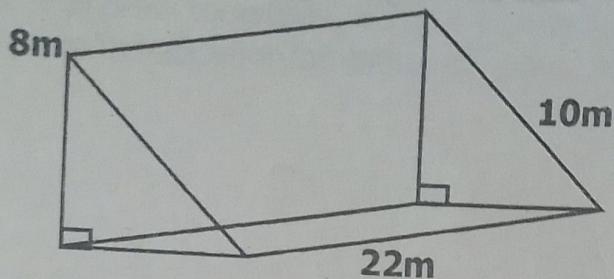
b. Measure the length of diagonal QR . (1 mark)

30 a. Evaluate: $2.5 - 9.55 + 10.6$ (2 marks)

b. Simplify: $\frac{2^6 \times 2^9}{2^4 \times 2^7}$ (2 marks)

c. What number has been written in standard form to give 2.73×10^{17} ? (1 mark)

31. Below is a triangular prism. Study it carefully and answer questions about it.



a. Calculate its volume.

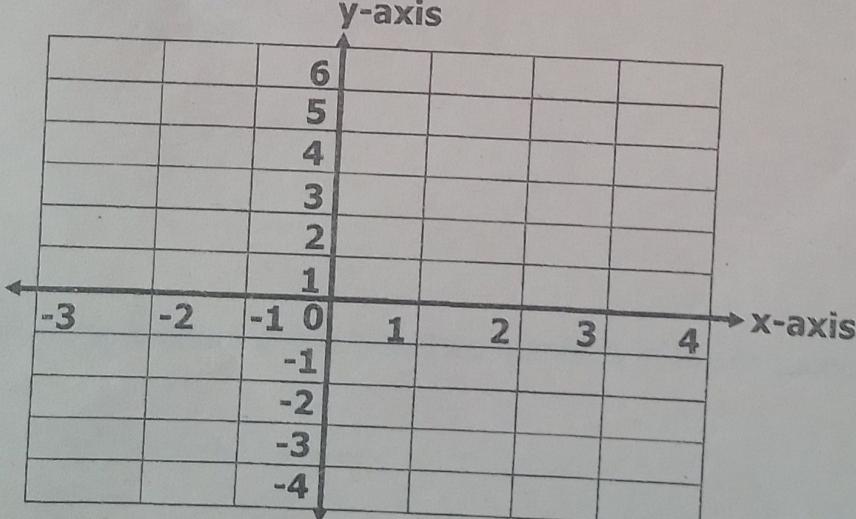
(3 marks)

b. Work out its total surface area.

(2 marks)

32a. On the grid below, plot these points C (-2, 3) D (1, 3) E (3, -1) and F (-2, -1)

(3 marks)



b. Join C to D, D to E, E to F and F to C.

(1 mark)

c. Name the figure formed.